

ROBUST SUMMARY
ALKYL SULFIDE CATEGORY
CAS # 68515-88-8
HEALTH ELEMENTS: ACUTE TOXICITY

<u>Test Substance</u>	
CAS #	CAS# 68515-88-8
Chemical Name	Pentene, 2,4,4-trimethyl-, sulfurized
Remarks	97% purity This chemical is also referred to as trimethyl pentene derivative in the HERTG's Test Plan for Alkyl Sulfide Category. For more information on the chemical, see Section 2.0 "Chemical Description of Alkyl Sulfide Category" in HERTG's Test Plan for Alkyl Sulfide Category.
<u>Method</u>	
Method/Guideline followed	OECD 403
Test Type	Acute inhalation toxicity
GLP (Y/N)	Y
Year (Study Performed)	1987
Species/Strain	Albino rats of the Sprague-Dawley strain
Sex	Male and female
No. of animals/sex/dose	5 rats/sex/dose
Vehicle	Mineral oil-based material dosed undiluted
Route of administration	Aerosol inhalation
Dose	1.5, 2.5 and 5.6 mg/L (actual concentration)
Remarks field for test conditions	Three groups of five rats/sex were exposed for 4 hours to the test material as a liquid droplet aerosol generated by a pressure spray apparatus delivered into a plexi-glass chamber. The details of the whole body exposure are consistent with those described in OECD guideline 403. The actual exposure concentrations as measured by gravimetric analysis were 1.5, 2.5 and 5.6 mg/L. Particle size analyses were performed twice/hour using a multi-stage cascade impactor. Animal observations for toxicological signs and mortality were recorded periodically during the exposure, and twice daily for the 14-day observation period. Individual weights were recorded on the day prior to exposure and on days 4, 8 and 14. At the conclusion of the observation period, the surviving animals were euthanized using pentobarbital as an anesthetic followed by exsanguination. All animals were subjected to gross necropsy (external body surface and orifices, major visceral organs, body cavities and carcass). The LC50 with 95% confidence intervals was computed using the method of Miller and Tainter (1944).
<u>Results</u>	LC50 (males) > 5.0 mg/L; LC50 (females) = 2.17 mg/L
Remarks	The mass median aerodynamic diameter for the studies was 3.15 microns with a geometric standard deviation of 2.45 (estimated percent of particles < 12 microns = 90.5%). Remarkable animal observations during the studies include alopecia (noted at all dose levels during second week of observation), ataxia (noted prior to the death of one female in the 5.6 mg/L group), dark material around eye

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	(noted in two animal/sex at the 5.6 mg/l dose), decreased activity (noted in all animals at the dose level of 2.5 and 5.6 mg/L; reversible by study day 5), respiratory irregularity (increased respiration noted in all groups during and immediately following exposure; reversible by study day 7), tremors (noted in one female during and immediately following exposure to 2.5 mg/L). No male deaths were recorded for any of the dose levels. Group mean body weights were decreased at day 4 among males exposed to 2.5 and 5.6 mg/L. This effect was reversible by study observation day 8 and 14. Three of 5 females in the 1.5 mg/L group died on day 2 following exposure. Four of 5 female rats exposed to 2.5 mg/L died on observation day 2. Three females in the high dose group died on day 2 following exposure, with an addition death on day 6. Body weights decreased at day 4 in the surviving females, an effect that was reversible by days 8 and 14. No internal lesions or abnormalities were noted in any animal sacrificed at study termination. Pathological findings among females which died during the course of the observation period include brain (prominent vascularization, and blood in the cranial cavity), nasal passages (reddening of the nasal passage, with the notation of clear fluid in the nasal passage), lungs (reddening of the lungs, with the observation of a 'puffy' lung in one female) and trachea (clear fluid noted in the trachea of one female).
<u>Conclusion</u>	Following 4-hour whole-body exposure to a liquid droplet aerosol of the test material, the LC50 in male Sprague-Dawley rats is considered to be greater than 5.6 mg/L. The LC50 value in females was calculated to be 2.17 mg/L with upper and lower confidence limits of 3.69 and 0.64 mg/L.
<u>Data Quality</u>	Reliable without restriction (Klimisch Code)
<u>References</u>	This robust summary was prepared from an unpublished study by an individual member company of the HERTG (the underlying study contains confidential business information).
<u>Other</u>	Updated: 12-29-99